

Statement of Work: Technical/Systems Data -- Coal-Based Energy Systems

Subject Matter:

NETL's Strategic Center for Coal is seeking access to commercially available data related to coal-based energy systems that would be used to support internal a wide variety of technical and systems analysis efforts within NETL. Such information would be used in support of federal analysis efforts and not be released directly to the public. Specific data of interest is as follows:

- 1) Engineering and economic evaluations and market assessments of advanced coal generation systems to assist determinations of:
 - whether advanced coal technologies are an appropriate fit with short-, medium-, and long-term goals, and
 - which combination of technologies offers the greatest performance for the least-cost and risk in a particular settings

Data to enable screening technology options and conducting initial feasibility studies that assess the economics, operating performance, technological risk, and market prospects of advanced coal generation technologies, including integrated gasification combined cycle, ultra-supercritical pulverized coal, and supercritical fluidized-bed combustion. Information on methods to compare the economic risks and benefits of various advanced coal technologies, particularly for future scenarios involving CO₂ emission constraints. Data also to provide information on the performance of existing plants and status of emerging market options.

- 2) Gasification-based power plant development and use (IGCC systems) data:

- to provide the latest information on IGCC cost, performance, and commercial trends and on optimal design and configuration basis for IGCC plants fueled by different coal types and subject to various regulatory requirements. Will allow identification of the most appropriate designs based on plant location, fuel type, duty requirements, method of financing, and other parameters.
- detailed status and design information on gasification-based power systems using coal and other opportunity fuels, including petroleum residuals and biomass.

- 3) Combustion-based power plant development and use (PC and CFB systems) data:

- Provide design guidelines for USC and FBC plants based on experience of early users, information on new materials and how they could be used to optimize USC and FBC plants, and performance evaluations of various approaches to improving sorbent utilization in FBC units.

- Information relevant to new designs and materials for higher efficiency ultra-supercritical PC plants and supercritical fluidized-bed combustion plants.

Deliverables:

1. Quarterly Update reports (minimum) in the subject areas listed above in hardcopy or via electronic copy.
2. Semiannual Reports for the areas listed above
3. Access to system for discrete data and analysis in subject areas listed above.